IN THE CLAIMS:

Please amend claims 29, 34, 35, 47-50, 52 and 55, and add claims 57 to 63, so that the pending claims read in accordance with the following listing of claims:

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)
5. (Cancelled)
6. (Cancelled)
7. (Cancelled)
8. (Cancelled)
9. (Cancelled)
10. (Cancelled)
11. (Cancelled)
12. (Cancelled)
13. (Cancelled)
14. (Cancelled)
15. (Cancelled)
16. (Cancelled)
17. (Cancelled)
18. (Cancelled)
19. (Cancelled)
20. (Cancelled)
21. (Cancelled)
22. (Cancelled)
23. (Cancelled)
24. (Cancelled)
25. (Cancelled)

26. (Cancelled)

27. (Cancelled)

28. (Cancelled)

29. (Currently Amended) A method ~~for estimating a distance between stations communicating in a communication system over a radio interface, wherein at least one of the stations transmits signal bursts in time slots in accordance with a timing structure and at least one station receives the signal bursts, said method~~ comprising ~~the steps~~:

determining a first timing of a signal burst received from a transmitting station at a receiving station, the first timing being associated with the first component of the received signal burst that meets a predefined condition;

determining a second timing of the received signal burst, said second timing being for use in adjustment of internal timing of the receiving station for communicating further signal bursts with the transmitting station;

determining timing delay information for the communication between the transmitting and receiving stations; and

estimating a distance between the transmitting and receiving stations based on said timing delay information and information about the first timing of the received signal burst.

30. (Original) A method according to claim 29, comprising determining a difference between the first timing and the second timing, wherein the determined difference is used as a correction value in the estimation of the distance between the stations.

31. (Original) A method according to claim 29, wherein a timing advance value that is based on the timing delay information is used in said estimation of the distance, comprising:

determining a difference between the first timing and the second timing; and subtracting the difference between the first timing and the second timing from the timing advance value.

32. (Original) A method according to claim 29, wherein the respective timings are determined using an impulse response of the received signal burst.

33. (Original) A method according to claim 32, wherein the determination of the second timing is based on the mass center of the impulse response.

34. (Currently Amended) A method according to claim 30, wherein the receiving station determines the difference between the first timing and the second timing and the first and second ~~respective~~ timings are determined using ~~by means of~~ an impulse response of the received signal burst.

35. (Currently Amended) A method according to claim 34, comprising transmitting ~~wherein the receiving station transmits~~ the determined difference between the first timing and the second timing to the transmitting station for processing.

36. (Original) A method according to claim 29, comprising:

use of different reception and transmission timings at the receiving station, wherein the reception timing of the receiving station is adjusted in accordance with the determined second timing and the transmission timing for transmitting a response signal from the receiving station to the transmitting station is adjusted in accordance with the determined first timing;

receiving the response signal at the transmitting station;

determining at the transmitting station a timing of the received response signal such that the timing is based on a component of the received response signal corresponding said first component; and

determining a difference between the transmission timing and the timing of the received response signal.

37. (Original) A method according to claim 36, wherein the receiving station informs the communication system that it uses different reception and transmission timings.

38. (Original) A method according to claim 29, wherein the receiving station comprises a mobile station of a cellular communication system and the transmitting station comprises a base station of the cellular communication system.

39. (Original) A method according to claim 29, wherein the receiving station comprises a base station of a cellular communication system and the transmitting station comprises a mobile station of the cellular communication system.

40. (Original) A method according to claim 39, wherein the difference between the timings is subtracted from the timing advance by the base station.

41. (Original) A method according to claim 29, wherein the predefined condition is met by the signal component of the signal burst that arrives as a first detectable component of the transmission.

42. (Original) A method according to claim 29, wherein the predefined condition comprises a threshold value for the components.

43. (Original) A method according to claim 29, wherein one of the stations is a mobile station of a cellular communication system and at least one of the stations is a fixedly positioned base station, further comprising a step of determining the current geographical location of the mobile station by means of the distance between the mobile station and said at least one base station.

44. (Original) A method according to claim 43, further comprising step of:

determining at least-one further distance between the mobile station and at least one further base station; and

combining the results of the at least two determinations for estimating the current geographical location of the mobile station.

45. (Original) A method according to claim 29, wherein one of the stations is a mobile station, comprising step of combining the result of the estimation of the distance between the mobile station and another station with at least one further result obtained from another determination relating to the location of the mobile station.

46. (Original) A method according to claim 29, comprising communicating information of at least one of the accomplished determinations to a location service node of the communication system.

47. (Currently Amended) A communication system comprising:

a transmitting station arranged to transmit one or more signal bursts over time slots in accordance with a timing structure of the communication system;

a receiving station ~~arranged~~ configured to:

receive the one or more signal bursts, determine; ~~control means for determining~~ a first timing of a signal burst received at the receiving station, the first timing being associated with the first component of the received signal that meets a predefined condition; ~~control means for determining~~ , determine a second timing of the received signal burst for use in adjustment of the receiving station for receiving and/or transmitting further signal bursts; ~~control means for determining~~ , determine timing delay information for communication between the stations, and ~~control means for estimating~~ estimate a distance between the transmitting and receiving stations based on the timing delay information and information about the first timing.

48. (Currently Amended) A communication system according to claim 47, wherein the ~~control means for estimating the difference are arranged further~~ receiving station is configured to determine a difference between the first timing and the second timing and to correct an initial estimate of the distance between the stations on the basis of the determined difference.

49. (Currently Amended) A communication system according to claim 47, wherein the ~~control means for estimating the difference are arranged~~ receiving station is configured to

base the distance estimation on a timing advance value derived from the timing delay information, to determine a difference between the first timing and the second timing, and to subtract the difference between the first timing and the second timing from the timing advance value.

50. (Currently Amended) A communication system according to claim 47, wherein the ~~control means for determining the timings are arranged~~ receiving unit is configured to make use of an impulse response of the received signal burst.

51. (Original) A communication system according to claim 50, wherein the determination of the second timing is based on the mass center of the impulse response and the determination of the first timing is based on a first component of the signal to arrive.

52. (Currently Amended) A communication system according to claim 47, wherein the receiving station is ~~arranged~~ configured to use different timings for reception and transmission.

53. (Original) A communication system according to claim 47, wherein the receiving station comprises a mobile station of a cellular communication system and the transmitting station comprises a base station of the cellular communication system.

54. (Original) A communication system according to claim 47, wherein the receiving station comprises a base station of a cellular communication system and the transmitting station comprises a mobile station of the cellular communication system.

55. (Currently Amended) A communication system according to claim 47, wherein one of the stations is a mobile station of a cellular communication system and at least one other of the stations is a fixedly positioned base station, ~~further comprising means for determining~~ the system configured to determine the current geographical location of the mobile station by means of the distance between the mobile station and said at least one base station,

56. (Original) A communication system according to claim 47, comprising further a location service node for providing geographical location information.

57. (New) A communication system comprising:

a transmitting station comprising means for transmitting one or more signal bursts over time slots in accordance with a timing structure of the communication system;

a receiving station comprising:

means for receiving the one or more signal bursts;

control means for determining a first timing of a signal burst received at the receiving station, the first timing being associated with the first component of the received signal that meets a predefined condition;

control means for determining a second timing of the received signal burst for use in adjustment of the receiving station for receiving and/or transmitting further signal bursts;

control means for determining timing delay information for communication between the stations; and

control means for estimating a distance between the transmitting and receiving stations based on the timing delay information and information about the first timing.

58. (New) A station in a communications system comprising a processing unit configured to:

determine a first timing of a received signal burst received from a transmitting station at the station, the first timing being associated with a first component of the received signal burst that meets a predefined condition, determine a second timing of the received signal burst, said second timing being for use in adjustment of internal timing of the station for communicating further signal bursts with the transmitting station, determine timing delay information for the communication between the transmitting station and the station, and estimate a distance between the transmitting station and the station based on said timing delay information and information about the first timing of the received signal burst.

59. (New) A station in a communications system comprising

means for determining a first timing of a received signal burst received from a transmitting station at the station, the first timing being associated with a first component of the received signal burst that meets a predefined condition;

means for determining a second timing of the received signal burst, said second timing being for use in adjustment of internal timing of the station for communicating further signal bursts with the transmitting station;

means for determining timing delay information for the communication between the transmitting station and the station; and

means for estimating a distance between the transmitting station and the station based on said timing delay information and information about the first timing of the received signal burst.

60. (New) A method comprising:

receiving at a first station a signal burst transmitted from a second station;

determining first timing information associated with the signal burst;

determining second timing information associated with the signal burst;

determining timing delay information associated said second timing of the signal burst; and

estimating a distance between the first and second stations based on said timing delay information and said first and second timing information.

61. (New) The method if claim 60 comprising calculating a difference between said first and second timing information, wherein said estimating uses said difference.

62. (New) A computer-readable medium having computer-executable components for:

determining a first timing of a received signal burst received from a transmitting station at a receiving station, the first timing being associated with a first component of the received signal burst that meets a predefined condition;

determining a second timing of the received signal burst, said second timing being for use in adjustment of internal timing of the receiving station for communicating further signal bursts with the transmitting station;

determining timing delay information for the communication between the transmitting and receiving stations; and

estimating a distance between the transmitting and receiving stations based on said timing delay information and information about the first timing of the received signal burst.

63. (New) A computer-readable medium having computer-executable components for:

receiving at a first station a signal burst transmitted from a second station;

determining first timing information associated with the signal burst;

determining second timing information associated with the signal burst;

determining timing delay information associated said second timing of the signal burst; and

estimating a distance between the first and second stations based on said timing delay information and said first and second timing information.